

The Large Class Teaching Strategies in Aquatic Activities

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Abstract: The challenge of learning in large classes demands appropriate classroom strategy setting, the main problem of this research is to find out the increase in gliding skill, as well as its correlation with freestyle swimming basic movements. The method used was quasi experiment, with casual comparative research wherein all student of class of 2014 enrolling aquatic activity. The sampling technique was purposive sampling by which 108 students were selected. They were divided into three homogenous groups based on their respective gliding test result deemed as the most dominant movement patterns in their aquatic activities. Class A and C used peer assist learning (PAL), Class B applied mixed conventional learning strategies (CL= Cooperative Learning and DI= Direct Instruction) for 8 meetings. Based on the calculation and data analysis, there is a significant increase of skill with $p = 0,031$ ($0.031 < 0.05$). Each group has an increase and positive correlation between gliding on freestyle swimming style of 0.64 (p of 0.00). The conclusion of the research on the application of PAL and CL in large-scale aquatic learning activities has improved students' gliding ability, and there is a positive correlation between sliding towards freestyle movement.

1 INTRODUCTION

The requirement of PJOK curriculum requires the master teacher to master the skills related to aquatic activities, this activity becomes the compulsory subject for the prospective teacher student in the sports education department, but the selection of candidates in the two study programs (PJKR and PGSD Penjas) does not require those basic swimming skills. The impact of the recruitment system without requiring basic swimming skills plus an overly large class (on average for every 40 students), the failure rate of students who do not have basic swimming skills in the first semester is quite high above 50% on average.

The NASPE developed standards of teacher ratio and pupils are at least 1:35 for safety and effective learning, if higher than those standards are called large classes, which will have consequences, among others: decreasing active learning time related to classroom management issues; reduced time, tool and space ratio; decreasing the ability of teachers to provide individual learning time; which will increase only the risk of injury and admonish students who "deviated" more and more.

Large classroom learning requires a specific strategy in its implementation, given the subsequent

problems and impacts, addressing large class challenges such as those recommended by NASPE for large classes, including: learning is made in small groups, cooperative learning, peer teaching, work, the application of different curricula, individual learning, class projects, peer assessment / assessment (Santin et al., 2015).

The large learning strategy developed in the PJKR study program through the first semester of UTS uses a selection of various learning strategies based on the consideration of the ratio of lecturers and students is limited, group B students are students with average test results glide at the beginning of the course, but not too afraid with the water environment, as evidenced by the gliding test over 2.50 m but less than 4.0 m, Group A students have mastered more than 2 styles, the average test result slid more than 4.0 meters, while the C group's ability to glide at less than 2.40m is the group who cannot yet swim with various background reasons.

Based on the consideration of the ratio of students and lecturers, in group B will be applied conventional learning with various learning strategies are more likely to cooperative learning (CL), CL is not just cooperation alone but according Schmidt et al. (2015) more as a positive structure of interdependence in pursuit of special goals or results

(Topping, 2005). A class that has the ability to swim more than 2 styles, lecture materials up to 8 meetings / midtes goal is mastery of 25-meter freestyle pool, group A who has mastered the swimming skills, will help group C to peer teacher of his group C which is not yet can swim.

A learning approach known as peer teaching model is more familiar with PAL in physical education, a potential learning to eliminate some obstacles to the students' learning process as well as fun, helping teachers to directly observe and study difficulties among individual students in Metzler and Croft (2005) and Jenkinson et al. (2018), as well as learning strategies that practice peer learning has become a model of learning that is often used widely from various disciplines and various levels of education, including nursing, medicine, law, accounting, economics, English, micro-biology and chemistry (Duah et al., 2014). Research in clinical physiotherapy (Sevenhuysen et al., 2013). These PAL researches indicate that PAL is an important means of providing opportunities to help new students tackle and pass the first year at university (Jenkinson et al., 2018), as well as providing an important role model for student success.

The results of PAL-related research in the world of Physical Education and Sport, there are some noteworthy research findings linked to school of snatch and sports as well as physical activity (D'Arripe-Longueville et al., 2002; Ayvazo and Ward 2009); PAL associated with learning in elementary school (Crouch et al., 1997; Jenkinson et al., 2018; Ward et al., 1998; Johnson and Ward 2001; Nurmi and Kokkonen, 2015).

The implementation of Cooperative Learning (CL) in the learning of PE has also been widely practiced, according to Dyson et al., 2010. CL has been understood as an innovative method of learning, which develops cooperation between students and groups, by organizing classes in small groups (Lafont et al., 2017). The purpose of this research is to reveal the learning strategy in an effort to improve the skill mastery skill of students of FPOK UPI Bandung, where the ability to glide is also suspected as dominant motion pattern which contributes to the mastery of basic free style motion.

2 METHODS

2.1 Participants

Of 140 FPOK UPI Bandung students registered and enrolled in aquatic activities course 1, They were

selected by purposive sampling technique as many as 108 students, women = 34.6% and Men 65.4%, their average age = 18.09 years; average height = 167.76 cm; and mean body weight = 57.86 kg, all students who participated in this study were healthy and physically normal.

2.2 Instrument

2.2.1 The Gliding Skill Test without Leg and Arm Movement

The instrument used to classify basic swim motion skills, through glide tests as dominant motion patterns in aquatic activity, gliding abilities in terms of distance traveled by the student from the starting position attached to the pool side wall until another movement changes the slide position. this glide test has been carried out over 4 years as a preliminary study, this slide is suspected as "building block" dominant base pattern in aquatic / swimming activities (Nugraha and Firmansyah, 2013a; Nugraha and Firmansyah, 2013b).

2.2.2 The Swimming Basic Technique Tests

Instrument used to assess the basic freestyle skill is the free style swim skill check form, in which the range of each freestyle technique is 1 - 4, (consisting of body position, arm movement, leg movement, and coordination of motion intact), as well as the distance that student can take.

All college students contracting aquatic activities courses are summoned for explanation related to early lecture activities and lecture models that will be followed, the determination of the lecture model that is lived depends on the initial test results of the ability to glide. The procedure for gliding test is described as follows:

- Students are lined up 5 in accordance with the order of the attendance list, in the sequence starting the first line of conduct, the second line of preparation, and the third line of noting and reporting the results of the first row member, the alternate sequential position for each class;
- The ready position of the testee standing position on the edge of the pool cuts the track lane, one foot attached to the pool wall as a pedestal, both arms put together and straightened maintained;
- The "yes" position of the leg is placed on the wall, straight body position, straight leg, and

straight arm clamping both ears, held parallel to the surface of the water;

- The gliding position is held steadily, until the change position means the slide has been completed. mileage recorded in a centimeter.

The freestyle basic skill test is done at the end of the semester on the 8th week, the test using the freestyle skill assessment (Nugraha and Firmansyah, 2013b).

3 RESULTS AND DISCUSSION

Based on the calculation and analysis, the next data is processed using SPSS Software version 22.00 IBM for improvement of glide ability in each group as in figure 1. Techniques, it can save inventory costs of \$11,253.85.

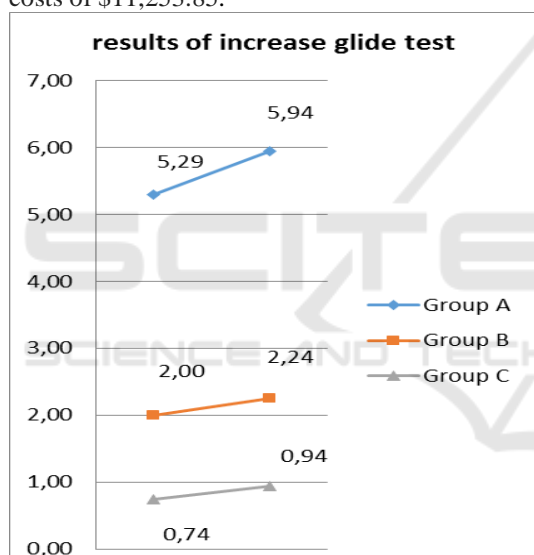


Figure 1: The Gliding Skill Improvement Chart.

In Figure 1, it is seen that all learning groups have been improving, although the improvement is not very noticeable, but basically every learning team in this skill mastery skill has improved better, as for to see the difference of its increase can be seen from the result of descriptive analysis, at table 1.

Table 1. The Result of Descriptive Analysis.

	N	Mean	SD	Std. Error
Group A	36.00	0.65	0.19	0.03
Group B	36.00	0.24	0.09	0.02
Group A	36.00	0.20	0.08	0.01
Total	108.00	0.36	0.24	0.02

From the follow up test of ANOVA, the improvement of the respective groups is more obvious as in Table 2.

Table 2: Anova Analysis Result.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.52	2.00	2.26	137.24	0.00
Within Groups	1.73	105.00	0.02		
Total	6.25	107.00			

From the analysis, it was revealed that F was 137,24 and it was significant in p_value 0,00 (0,00 < 0,05). The result confirmed that there are significant improvement differences between groups (Group A, B and C). The difference was presented in table 3.

Table 3: The comparison of Gliding Test Result.

(I) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Group A	Group B	0.41	0.03	0.00	0.35 0.47
	Group A	0.46	0.03	0.00	0.40 0.52
Group B	Group A	-0.41	0.03	0.00	-0.47 -0.35
	Group A	0.05	0.03	0.12	-0.01 0.11

Based on the results of post-anova test analysis, showed that group A showed a higher increase than group B, with a mean difference of 0.41 and significant at 0.00 (0,00 < 0,05). The comparison of group an increase was higher than group C with the mean difference of 0.46 and significant at 0.00 (0,00 < 0,05). While the comparison of increase between group B and group C did not show significant difference, with the mean difference of 0.05 and not significant at 0.12 (0,12 > 0,05).

The conclusion of the research has come to the understanding that the learning strategy through PAL and CL and DI can improve the ability of student glide as well as to improve the mastery of their basic swimming skill, according to previous research result related to the skill mastery in Grade 3 Class (Johnson and Ward, 2001).

The impact of learning strategies in homogenous classes decreased the failure rate of students in semester 1, whereas the failure rate of 3 years before the implementation of this strategy, close to almost 53% so that students who follow the aquatic activity

2 can be reduced almost half, but it needs to do further research related to the subjective impression of the students to different classes (class A, Class B, and class C)

The results of correlation analysis obtained through Pearson correlation between the ability to slide with the results of basic freestyle skills was shown in table 4.

Table 4: The Result of Correlation Analysis.

VAR00003	Pearson Correlation	1	.648**
	Sig. (2-tailed)		.000
	N	36	36
VAR00005	Pearson Correlation	.648**	1
	Sig. (2-tailed)	.000	
	N	36	36

** . Correlation is significant at the 0.01 level (2-tailed)

From table 4. Pearson Correlation coefficients are used to determine correlation among research variables, in this study the skill of gliding and the result of freestyle skill showed a positive correlation ($P < .01 = .648$).

Similar to the preliminary research that has been going on for almost 4 (four) years that the ability to glide is directly proportional to the mastery of free-floating elementary movement skills, the ability to glide / float is suspected as "Building Block" dominant base pattern on aquatic activity (Nugraha and Firmansyah, 2013a).

REFERENCES

- Ayvazo, S., Ward, P., 2009. Effects of classwide peer tutoring on the performance of sixth grade students during a volleyball unit. *Physical Educator*. 66(1), 12.
- Crouch, D. W., Ward, P., Patrick, C. A., 1997. The effects of peer-mediated accountability on task accomplishment during volleyball drills in elementary physical education. *Journal of Teaching in Physical Education*. 17(1), 26-39.
- d'Arripe-Longueville, F., Gernigon, C., Huet, M. L., Cadopi, M., Winnykamen, F., 2002. Peer tutoring in a physical education setting: Influence of tutor skill level on novice learners' motivation and performance. *Journal of Teaching in Physical Education*. 22(1), 105-123.
- Duah, F., Croft, T., Inglis, M., 2014. Can peer assisted learning be effective in undergraduate mathematics?. *International Journal of Mathematical Education in Science and Technology*. 45(4), 552-565.
- Jenkinson, K. A., Naughton, G., Benson, A. C., 2018. A Stealth Intervention: The GLAMA (Girls! Lead! Achieve! Mentor! Activate!) and BLAST (Boys! Lead! Activate! Succeed Together!) School Connectedness, Peer Leadership and Physical Activity Transition Program. *Australian Journal of Teacher Education*. 43(1), 3.
- Johnson, M., Ward, P., 2001. Effects of classwide peer tutoring on correct performance of striking skills in 3rd grade physical education. *Journal of Teaching in Physical Education*. 20(3), 247-263.
- Lafont, L., Rivière, C., Darnis, F., Legrain, P., 2017. How to structure group work? Conditions of efficacy and methodological considerations in physical education. *European Physical Education Review*. 23(3), 327-338.
- Metzler, D., Croft, W. B., 2005. A Markov random field model for term dependencies. In *Proceedings of the 28th annual international ACM SIGIR conference on Research and development in information retrieval*. (pp. 472-479). ACM.
- Nugraha, E., Firmansyah, H., 2013a. *Didaktik Metodik Pembelajaran Aktivitas Akuatik*, UPI Press. Bandung.
- Nugraha, E., Firmansyah, H., 2013b. *Pembelajaran Renang*, CV Bintang Warli Artika. Bandung.
- Nurmi, A. M., Kokkonen, M., 2015. Peers as teachers in physical education hip hop classes in Finnish high school. *Journal of Education and Training Studies*. 3(3), 23-32.
- Santin, K., Sousa, L. S. G., Cardoso, B. M., Antonioli, P. D., Argoud, A. R. T. T., 2015. MRP implementation on supply management process: a Brazilian furniture industry case study. *European Journal of Business and Social Sciences*. 4(01), 158-173.
- Schmidt, M., B. Münzberg, P.Nyhuis. 2015. Determining Lot Sizes in Production Areas – Exact Calculations versus Research Based Estimation. *Procedia CIRP-Elsevier*. Vol.28, p143-148.
- Sevenhuysen, S. L., Nickson, W., Farlie, M. K., Raitman, L., Keating, J. L., Molloy, E., Haines, T. P., 2013. The development of a peer assisted learning model for the clinical education of physiotherapy students. *Journal of Peer Learning*. 6(1), 4.
- Topping, K. J., 2005. Trends in peer learning. *Educational psychology*. 25(6), 631-645.
- Ward, S. V., 1998. *Selling places: the marketing and promotion of towns and cities*, Taylor & Francis. 1850-2000 (Vol. 23).